**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

IOENGINE, LLC,	C.A. No. 6:21-cv-1296-ADA-DTG
Plaintiff/Counterclaim Defendant,	
v.	**JURY TRIAL DEMANDED**
ROKU, INC.,	**PUBLIC VERSION**
Defendant/Counterclaim Plaintiff.	

<u>DEFENDANT ROKU, INC.'S OMNIBUS MOTION FOR SUMMARY JUDGMENT</u>

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I.   **INTRODUCTION**

Defendant Roku, Inc. ("Roku") is an innovative American company with hundreds of issued U.S. patents and products in several diverse spaces, though is best known for its pioneering work in the streaming video industry, enabling users to "cut the cord" from traditional cable and watch multimedia content online directly through their Roku TV or through a Roku streaming player connected to a TV.

Plaintiff IOENGINE, LLC ("IOENGINE"), a non-practicing entity, accuses Roku's streaming players of infringing U.S. Patent Nos. 10,447,819 ("the '819 Patent") and 10,972,584 ("the '584 Patent") (the "Asserted Patents"). Roku TVs and Roku streaming sound bars are not accused. Summary judgment is warranted on a wide range of issues, including:

1. *No 2001 Conception Date*. IOENGINE relies on a single document titled "Portable devices rule" ("PDR document") as corroborating evidence of conception of the Asserted Claims. This document—supposedly written by the inventor, Mr. Scott McNulty—is dated at least *sixteen years prior* to the filing of the Asserted Patents and does not disclose the elements of the Asserted Claims—which is fatal to establishing conception. Indeed, Mr. McNulty admitted that the PDR document is *not* particular to the Asserted Claims in this case. There is no genuine issue of material fact that the PDR document does not sufficiently corroborate a 2001 conception date.

2. *Invalidity for Lacking Written Description*. The claims of the Asserted Patents were drafted over fifteen years—and multiple intervening patent applications and claims—after the specification disclosing the purported invention was drafted. While technically permissible, the law does *not* allow claims to expand the scope of the patent monopoly beyond what Mr. McNulty purportedly invented and disclosed. Here, there is a mismatch between the specification as originally drafted and the claims later crafted, rendering all Asserted Claims invalid for lack of written description. First, the Asserted Claims all include a portable device with its own Internet

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connection. But, IOENGINE's specification only describes a portable device that can connect to a terminal and access the Internet through *the terminal's* Internet connection, *i.e.*, by tunneling, and does not describe a portable device with *its own* Internet connection. Second, the '584 Patent claims include a cryptographic key exchange between the portable device and the terminal, a concept absent from the specification.

3. *Non-Infringement: No terminal when the Accused Products are connected to a TV*. While the parties debate the exact confines of the meaning of "terminal," there can be no dispute that the "plain-and-ordinary" meaning of this term must, at a minimum, comport with the common specification of the Asserted Patents. Here, the specification expressly states that a terminal must at least provide "an operating environment for the user to engage the portable device." The undisputed evidence shows that in the allegedly infringing environment, when the Accused Products are connected to a TV, the TV *does not* provide such an operating environment. Summary judgement of non-infringement as to all Asserted Claims is appropriate because in this circumstance a TV does not qualify as a "terminal."

4. *Non-Infringement: The Accused Products lack the claimed processor.* Certain asserted claims require a processor configured to stream data content from the portable device to the terminal. IOENGINE points to the simple existence of a processor (a CPU) in the Accused Products as meeting this limitation. This is insufficient, as the claims require more. IOENGINE fails to identify *any* specific processor in the Accused Products that is "configured to stream data content for presentation by the terminal output component," as required by the claims. And, the Roku Accused Products actually have components *separate from* the device's CPU (identified as the claimed processor) responsible for these functions. The undisputed facts demonstrate that

Roku is entitled to summary judgment of non-infringement as to all Asserted Claims of the '819 Patent, along with dependent claims 6, 7, 10, 11, 34, 44, 45, 48, 68, 78, and 79 of the '584 Patent.

II.   OVERVIEW OF THE ASSERTED PATENTS

IOENGINE has asserted a subset of claims from the '819 Patent and the '584 Patent against Roku.[1] Each of the Asserted Claims recites a "portable device" that is configured to communicate with (1) a communications network node, and (2) a "terminal." IOENGINE argues that Roku infringes the Asserted Patents by, *inter alia*, selling Roku streaming players that are configured to communicate with the Internet and a terminal (using a specific Vizio TV as an example).

While the earliest Asserted Claims were not drafted until 2019, the Asserted Patents claim priority to a non-provisional patent application filed back in 2004. The common specification describes a portable device (for example, a thumb drive), consistently referred to as a "tunneling client access point" or "TCAP;" that can communicate with (1) a terminal (for example, a personal computer), called an "access terminal" or "AT;" and (2) a communications network (for example, the Internet) by sending communication *through* the access terminal using the terminal's Internet connection. Ex. A1, Abstract, 2:48-54, 3:57-63, 4:8-9, 4:57-61, 29:41-47.

Connecting the portable device to the access terminal allows a user to control the portable device through the terminal's user input mechanisms, such as a keyboard or mouse. *Id*. And, if the access terminal is connected to the Internet, the terminal provides the portable device with Internet connectivity. *Id.*, 3:59-63; 4:8-9; 4:57-58. This is illustrated in Figure 1 below: a portable device (devices 125 and 130 highlighted green) connected to and controlled by the terminal and

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[1] IOENGINE asserts claims 187-188 and 190-192 of the '819 Patent and claims 1-2, 5-7, 10-11, 18, 20, 22, 25-27, 29, 31, 39-40, 43-45, 48, 55, 57, 59-61, 63, 65, 73-74, 77-79, 86, 88, 90, 95, and 97 of the '584 Patent against Roku ("the Asserted Claims").

its user (devices 127 highlighted red), with the terminal connected to a communications network

(element 113 highlighted blue).
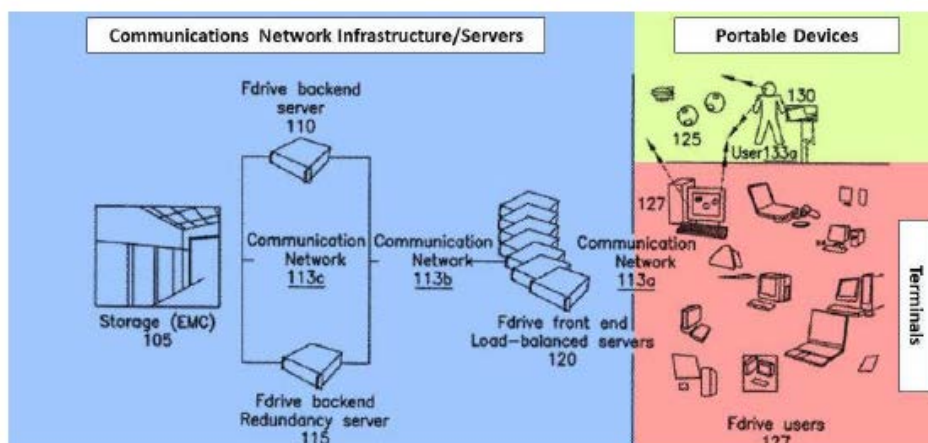
Id., Fig. 1 (emphasis added).

Once connected, the information on the portable device is displayed to the user via an

interactive user interface (such as a graphical user interface) on the screen of the terminal. *See id.*,

2:48-53; 4:50-52; 9:30-35; 9:44-52; 10:18-38. The user is then able to control the portable device

and access its content through the terminal using the terminal's keyboard and mouse. *See id.*, 2:48-

53; 4:52-56.

Although the portable device uses the terminal, it does not always trust the terminal, and

the specification describes encryption between the portable device and a server in the context of

securing content from the terminal. The specification touts the ability of the portable device to

securely access the user's information from any terminal, regardless of whether it is a trusted

terminal or not, because the portable device (1) *tunnels* through the terminals' communications

infrastructure to access any necessary backend servers, and (2) communicates with the backend

servers using an encryption scheme so that the terminal cannot intercept and read the data as it

passes through. *Id.*, 13:28-48 ("[V]arious encryption formats may be used by the [portable device]

to send information securely to the backend servers. In this case, *even if data moving out of the*

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[portable device] and across the [terminal] were captured at the [terminal], such data would not be readable because the data was encrypted by the [portable device]'s processor") (emphasis added); *see also id.*, 3:54-56, 7:28-31, 9:21-25.

III.   LEGAL STANDARDS

A.   Summary Judgment

Summary judgment shall be granted where it is shown "that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). A dispute about a material fact is genuine if "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). "By its very terms, this standard provides that the mere existence of *some* alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no *genuine* issue of *material* fact." *Id*. at 247–48. "[M]ere conclusory allegations are not competent summary judgment evidence, and such allegations are insufficient, therefore, to defeat a motion for summary judgment." *Eason v. Thaler*, 73 F.3d 1322, 1325 (5th Cir. 1996).

B.   Written Description

Patent laws reward innovation with a temporary monopoly. *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.,* 535 U.S. 722, 730-32 (2002). As such, the "patent laws require inventors to describe their work in 'full, clear, concise, and exact terms.'" *Id*. at 731. All claim limitations must appear in the specification. *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997).

The written description requirement "serves both to satisfy the inventor's obligation to disclose the technologic knowledge upon which the patent is based, and to demonstrate that the patentee was in possession of the invention that is claimed." *Capon v. Eshhar*, 418 F.3d 1349,

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1357 (Fed. Cir. 2005). It is for this reason that "[t]he written description doctrine prohibits new matter from entering into claim amendments, particularly during the continuation process." *Agilent Techs., Inc. v. Affymetrix, Inc.*, 567 F.3d 1366, 1379 (Fed. Cir. 2009). Thus, the written description serves "to prevent an applicant from later asserting that he invented that which he did not." *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1330 (Fed. Cir. 2003).

Compliance with 35 U.S.C. § 112 ¶ 1 is a question of fact. *ICU Med., Inc.*, 558 F.3d 1368, 1376 (Fed. Cir. 2009). Roku must demonstrate by clear and convincing evidence that the patent is invalid for lack of written description. *Id.*

C.   Conception and Corroboration

Determining the conception date of an invention is a legal conclusion based on underlying factual findings. *Taurus IP, LLC v. DaimlerChrysler Corp.*, 726 F.3d 1306, 1322 (Fed. Cir. 2013). Conception is "the formation in the mind of the inventor, of a *definite and permanent* idea of the *complete and operative* invention." *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1376 (Fed. Cir. 1986) (emphasis added). Conception must be corroborated. The corroboration requirement "arose out of a concern that inventors testifying in patent infringement cases would be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another's patent." *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 60 (1923); *Gasser Chair Co. v. Infanti Chair Mfg. Corp.*, 60 F.3d 770, 776 (Fed. Cir. 1995). Thus, inventor testimony alone is insufficient to corroborate an earlier date of invention. *Mahurkar v. C. R. Bard, Inc.,* 79 F.3d 1572, 1577 (Fed. Cir. 1996).

Corroboration must come from either documents or non-inventor testimony sufficient to show that the claimed invention was ready for patenting. *Id.* Corroborating evidence must include *every* feature of the claimed invention. *Coleman v. Dines*, 754 F.2d 353, 359 (Fed. Cir. 1985); *see also Data Race, Inc. v. Lucent Techs. Inc.*, 73 F. Supp. 2d 698, 705 (W.D. Tex. 1999). As such,

to sufficiently corroborate conception, the evidence must be *particular to the asserted patents* and must "describe the limitations of the [asserted patents] with *sufficient particularity* to establish a conception date prior to the filing of the [prior art reference]." *Northpoint Tech., Ltd. v. DirecTV, Inc.*, 2011 U.S. Dist. LEXIS 90275, *8 (W.D. Tex. June 17, 2011) (emphasis added).   Evidence that merely shows a "general goal" is insufficient. *Id.*, at *14; *see also Allergan, Inc. v. Apotex, Inc.*, 754 F.3d 952, 968 (Fed. Cir. 2014).   When considering corroboration evidence directed to multiple patents or patent applications, it is insufficient to "carve [out] a nebulous description that does not distinguish between the multiple applications for patent protection on various inventions related to [the asserted] technology." *Northpoint Tech., Ltd.*, at *11, 13.

IV.   THE ASSERTED CLAIMS' EARLIEST POSSIBLE PRIORITY DATE IS MARCH 23, 2004

IOENGINE relies on a single document titled "Portable devices rule" ("PDR document") as the corroborating evidence of conception of the Asserted Claims.   Ex. A2.[2]   This document—supposedly written by the sole inventor, Mr. Scott McNulty—is dated at least *sixteen years prior* to the filing of the Asserted Patents.   It is IOENGINE's position that Mr. McNulty filed the Asserted Patents in 2017 and 2019, but conceived of the complete and operative invention by 2001, and sufficiently memorialized the elements of the Asserted Claims in a one-and-a-half-page memo ███████.   This is utterly unsupported by the evidence in this case.

In order to corroborate conception, the evidence must be particular to the Asserted Patents *and* must describe the claim limitations with sufficient particularity.   Here, not only does the PDR document fail to disclose the elements of the Asserted Claims, it is not particular to the Asserted

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[2] IOENGINE produced different versions of the "Portable devices rule" document, ████████ ████, varying between one and a half to three pages in length.   The longest, and presumably most complete version is attached as Ex. A2, and another version is cited below.

Patents whatsoever. In fact, IOENGINE relied on the PDR document as corroborating evidence

of conception for at least three *other* patents in two prior litigations,[3] where different subject matter

was claimed. Although part of the same family, from the PDR document itself it is evident that

the memo is not particular to five different patents, and specifically not the Asserted Patents.

Indeed, Mr. McNulty testified that the PDR document is *not* particular to the Asserted Claims.

Yet, IOENGINE's technical expert, Dr. Shamos—who has never spoken to Mr.

McNulty—opines that the PDR document corroborates Mr. McNulty's conception of the Asserted

Claims. IOENGINE cannot manufacture a factual dispute through its litigation expert, particularly

when the evidence and Mr. McNulty, himself, show otherwise. There is no *genuine* issue of

material fact that the PDR document does not sufficiently corroborate a 2001 conception date.

A.   Background

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██████████████████████████████████████   *Id.*   This document—the PDR

document—is referred to by IOENGINE and its technical expert, Dr. Shamos, as the "conception

document" or the "Conception Memo." *Id.*; Ex. A4, ¶ 93. IOENGINE asserts that the PDR

document is the *single* piece of evidence corroborating the alleged ██████ conception date of

the Asserted Claims of the '819 Patent (filed in September 2017) and the '584 Patent (filed in

September 2019). *See* Ex. A1; Ex. A5.

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[3] *See IOENGINE, LLC v. Imation Corp.*, Civil Action No. 1:14-cv-01572 (D. Del.), involving U.S. Patent No. 8,539,047; and *IOENGINE, LLC v. Ingenico Inc.*, Civil Action No. 1:18-cv-00826 (D. Del.), involving U.S. Patent Nos. 9,059,969 and 9,774,703.

On its face, the PDR document is a short memo asserting that the "key" to Mr. McNulty's

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███   Ex. A2.   The PDR document also

references "hello Hal," among other things, from a Stanley Kubrick film, "*A Space Odyssey*,"

which was released in theaters in 2001.[4]   Ex. A2; Ex. A6, 196:20-22, 197:1-21.   Aside from

remembering the "hello, Hal" reference and allegedly seeing one version of the PDR document in

2001, Mr. Rzonca does not recall—and does not understand—anything else about the PDR

document.[5]   Ex. A6, 339:1-20, 340:1-25; Ex. A7, 97:24-98:25.

The document describes ████████████████████████████████████

███

██   Ex. A2.   The document

never finishes this thought,[6] but goes on to repeat certain information and state that a ██████

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[4] In this case and in prior litigations involving different patents in this family, when presenting the PDR document, IOENGINE elicited testimony from Mr. McNulty and his friend, Mr. Rzonca, regarding "hello, Hal" and Mr. Rzonca's personal connection to Stanley Kubrick's daughter, Katharina. Ex. A6, 196:12-22, 334:1-336:10; Ex. A7, 92:1-95:14; Ex. A8, 313:16-314:8.

[5] In prior litigations, Mr. Rzonca testified that he recalled working with Mr. McNulty. *See, e.g.,* Ex. A8, 314:21-315:18. In this case, however, Mr. Rzonca testified that ██████████████ ██ *See, e.g.,* Ex. A7, 14:1-18, 37:9-25, 38:6-25. In fact, in a deposition that lasted less than two hours— other than when being questioned by IOENGINE's counsel—███████████████████████ ███ ████████████████

[6] The PDR document ends mid-sentence in another section, stating: ██████████████ ████████████████████████████████ Ex. A1. ██████████████████████████ ████████████████████████████████████ *Compare* Ex. A1 *with* Ex. A9.

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████████████████████████████████   Ex. A2 (emphasis added).

IOENGINE's expert, Dr. Shamos, opines that the PDR document ███████████████

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████████████   Ex. A4, ¶ 96. Dr. Shamos has never spoken to Mr. McNulty, about the PDR

document or otherwise. Ex. A10, 18:25-19:5, 43:11-14; Ex. A11, 13:11-12. Yet he interprets the

document—specifically, the one and half page version of the PDR document—as disclosing the

subject matter recited in each of the forty-three Asserted Claims. Ex. A4, ¶¶ 93-128. This opinion,

however, directly contradicts Mr. McNulty's testimony in this case, that the PDR document

███   Ex.

A12, 179:7-22 (emphasis added).

B.   IOENGINE Cannot Corroborate its Alleged ███████████, Conception Date

No reasonable jury could find that the PDR document corroborates conception of the

Asserted Claims by ███████. Aside from a litigation-driven attempt by IOENGINE's technical

expert, there is not one person or one piece of evidence that corroborates a date prior to March 23,

2004. Under oath, Mr. McNulty testified that the PDR document does not disclose the elements

of the Asserted Claims. *Id.* Mr. McNulty's wife has not been deposed in this case, and his friend,

Mr. Rzonca, cannot recall anything beyond seeing the PDR document and its reference to Stanley

Kubrick's film, "*A Space Odyssey*." Ex. A6, 337:9-339:20, 340:1-25; Ex. A7, 97:24-98:25. This

evidence should end the inquiry. Even assuming, *arguendo*, the PDR document does disclose the

claim elements as Dr. Shamos suggests, it certainly does not do so with the particularity required

to qualify as corroborating evidence.[7]

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[7] While the lack of corroborating conception evidence alone is fatal, IOENGINE is also unable to show diligence from 2001 to 2004. ████████████████████████████████████

1.   The "Portable Devices Rule" Document Does Not Disclose the
        Elements of the Asserted Claims, and Certainly Not with Any
        Particularity

Evidence of conception must include *every feature* of the Asserted Claims, and must

describe the claim limitations with *sufficient particularity*. *See Coleman*, 754 F.2d 353 at 359; *see*

also Northpoint Tech., Ltd., 2011 U.S. Dist. LEXIS 90275, at *8, 11, 13-14. The PDR document

does not even mention most of the Asserted Claim limitations, let alone describe them with the

requisite particularity. For instance, certain Asserted Claims require a "network interface" that is

"configured to enable" communications "between the portable device and a communications

network node" and separately, a "communications interface" that is "configured to enable"

communications "between the portable device and the terminal." *See e.g.*, Ex. A1, claim 1, 48:1;

Ex. A5, claim 1. Yet, the PDR document does not once mention a ███████████████ " or a

███████████████████ ," let alone how these two interfaces are configured to enable the

claimed communications.[8] Ex. A2; *see also* Ex. A9.

Moreover, the Asserted Claims require a *detailed* set of software program codes—

specifically, a "first program code" through a "fourth" or "fifth program code"—each with a

different configuration and a specific set of operations. *See e.g.*, Ex. A1, claim 1; Ex. A5, claim

1, claim 39, claim 73. By way of example, Claim 1 of the '584 Patent recites the "fifth program

code" limitation as follows:

> (4) fifth program code which, when executed by the portable device processor, is
> configured to (i) process secure data received from the communications network
> node through the portable device network interface and (ii) cause the processed data
> to be securely transmitted through the communications interface to the terminal for

███
███ Ex.
A12, 145:24-149:14; Ex. A13, 224:21-226:8, 230:8-10, 237:21-241:2.

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[8] The PDR document references a ███████████████ ," but this is a distinct claim
limitation. *See, e.g.*, Ex. A9; Ex. A5, claim 1.

display by the terminal output component, wherein the portable device is configured to employ a key exchange between the portable device and the terminal to securely transmit the processed data through the communication interface to the terminal. Ex. A5, claim 1.

While the PDR document discloses that the portable device must contain the ███████ to connect the device to the computer systems, there is no disclosure of what this ████████ is or how it operates as recited in the Asserted Claims. Ex. A2. At most, the PDR document states that

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██"[9]

Ex. A2. This surely does not disclose the claimed *first, second, third, fourth* and *fifth* program code limitations, let alone describe each limitation with particularity.

IOENGINE cannot cure such deficient corroboration evidence, or even create a factual dispute, by having Dr. Shamos interpret the PDR document over two decades later, relying on documents dated after 2001, and *his* cumulative knowledge as a person of ordinary skill in the art.[10] Conception is "the formation *in the mind of the inventor*, of a definite and permanent idea of the complete and operative invention." *Hybritech Inc.*, F.2d at 1376 (emphasis added). Conception is *not* in the mind of IOENGINE's technical expert interpreting the PDR document during litigation. Dr. Shamos has no idea what Mr. McNulty was ███████████████████ and the PDR document—whether it is the one-and-half-page or the three-page version—does not

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[9] It is at this point in the PDR document where the description trails off mid-sentence, stating ██

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      Ex. A2.

[10] Dr. Shamos relies on improper inferences and later-dated documents to try to back-fill the PDR document in support of a ███████████████ date. *See, e.g.,* Ex. A4, ¶ 93 ███████████████ ███, ¶ 99 ████████████████████████, ¶ 103 (██████████████ ¶ 119 ███████████████████████████

set forth or particularly describe the limitations of the Asserted Claims. Ex. A12, 178:15-179:22.

During deposition, Dr. Shamos characterized the PDR document as Mr. McNulty

█████████████████████" (Ex. A11, 59:6-60:2), but this is not enough. *Northpoint Tech., Ltd.*,

2011 U.S. Dist. LEXIS 90275, at *8-14.   The document falls far short of qualifying as

corroborating evidence—it is drafted in "*A Space Odyssey*" jargon, it lacks any particularity, it is

untethered to the Asserted Patents—and the inventor testified that it is *not* particular to the Asserted

Claims in this case.

2.   The "Portable Devices Rule" Document Cannot Corroborate Conception for Five Different Patents

Thus far and including this case, IOENGINE has relied on the PDR document to attempt

to demonstrate Mr. McNulty's conception of the "inventions" claimed in five different patents.[11]

In the prior litigations, Mr. McNulty testified that the PDR document discloses the elements of the

asserted claims of three different patents. Ex. A6, 155:12-213:3; Ex. A33, 207:1-216:22. Here,

although Mr. McNulty testified otherwise (Ex. A12, 179:7-22), IOENGINE and Dr. Shamos assert

that the PDR document *also* corroborates conception of the Asserted Claims.[12] No reasonable jury

could read the PDR document as disclosing, *with particularity*, claim elements covering flash drive

technology, mobile card reader technology, as well as the streaming media player technology at

issue in this case.

Similar to evidence relied on in *Northpoint Tech.*, the PDR document—at best—provides

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[11] In the *IOENGINE, LLC v. Imation Corp.* case involving U.S. Patent No. 8,539,047, the accused products included flash drives; and in the *IOENGINE, LLC v. Ingenico* case involving U.S. Patent Nos. 9,059,969 and 9,774,703, the accused products included mobile card readers.

[12] To the extent that IOENGINE attempts to clarify Mr. McNulty's testimony, even "an inventor who failed to appreciate the claimed inventive features of a device at the time of alleged conception cannot use his later recognition of those features to retroactively cure his imperfect conception." *Hitzeman v. Rutter,* 243 F.3d 1345, 1359 (Fed. Cir. 2001).

some sort of "nebulous description" that does not distinguish between "various inventions," but rather describes "general efforts to make improvements in the world of [certain technological fields]." *Northpoint Tech., Ltd.*, 2011 U.S. Dist. LEXIS 90275, at *11-12. This is not sufficiently particular and cannot establish a conception date for the Asserted Claims. *Id.*

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While the PDR document *may* have corroborated earlier patents, it cannot be contorted twenty-two years later, through expert interpretation or otherwise, to support conception of the Asserted Claims in 2001. Because the evidence demonstrates that there can be no *genuine* dispute regarding the insufficiency of the PDR document for conception in this case, Roku respectfully requests that this Court grant its motion for summary judgment of no conception date prior to March 23, 2004.

V.   ALL ASSERTED CLAIMS ARE INVALID AS FOR FAILURE TO SATISFY THE WRITTEN DESCRIPTION REQUIREMENT

The fundamental bargain underlying the patent system is that a patentee must *describe* and *define* his or her claimed invention to the public in exchange for a patent monopoly. When patentees fail to hold up their end of the bargain, the patent is invalid for lack of written description. Here, the Asserted Patents' claims were drafted over fifteen years—and multiple intervening patent applications and claims—after the specification disclosing the purported invention was filed with the Patent Office. While technically permissible, the law does *not* allow claims to expand the scope of the patent monopoly beyond what the patentee purportedly invented and disclosed.

In this case, the multi-year and multi-patent gap between common disclosure and claims created a mismatch between the specification as originally drafted and the claims later crafted to ensnare the Accused Products.   IOENGINE's vast mismatch between the specification as originally drafted and the claims later crafted is fatal, as the specification lacks the requisite

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disclosure for multiple limitations related to fundamental features of the Asserted Claims. *Quake v. Lo*, 928 F.3d 1365, 1373 (Fed. Cir. 2019) (the disclosure requirement serves as a check to "to prevent an applicant from later asserting that he invented that which he did not.").

First, the Asserted Claims all include a portable device with its own Internet connection. But IOENGINE's specification only describes a portable device that can connect to a terminal and access the internet through *the terminal's* Internet connection, *i.e.*, by tunneling, and does not describe a portable device with *its own* Internet connection. Even a cursory review of the specification reveals that it was drafted to describe a portable device that connects to a computer and *tunnels* out through the computer's Internet connection. Simply put, the specification does not describe what is claimed, and as a result, every Asserted Claim is invalid. Second, the '584 Patent claims include a key exchange between the portable device and the terminal, a concept completely absent from the specification. Thus, additionally, the '584 Asserted Claims are invalid.

A. The Specification Fails to Disclose a Portable Device that can Directly Communicate with a Communications Network Node

All asserted independent claims require a portable device connected directly to a communications network node, reciting that the portable device comprises "a network interface configured to enable the transmission of communications between the portable device and the communications network node." *See* Ex. A1, claim 184; Ex. A5, claim 1, claim 39, claim 73. IOENGINE interprets this limitation as corresponding to the Wi-Fi capability of Roku's Accused Products. But in no instance does the specification disclose a portable device with a network interface that can directly communicate with a communications network node. *See* Ex. A22, ¶¶ 665-676. Rather, the specification only discloses a portable device connecting to the Internet, for example, by tunneling, using the *terminal's* Internet connection. *See id.*

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1.   The Specification and Extrinsic Evidence Support Roku's Position

The specification underscores why the terminal is called an "access terminal" and why the claimed portable device is called a "tunneling client access point:"

> … the contents of the TCAP 130 appear on the AT as being contained on the TCAP 125 even though much of the contents may actually reside on the servers 115, 120 ….   In these ways, the TCAP '***tunnels***' data ***through** an AT*…. *Also, the TCAP may **tunnel data through** an AT across a communications network* to access remote servers without requiring its own more complicated set of peripherals and I/O.

Ex. A1, 4:32-42 (emphasis added).[13] In other words, communications from the portable device to a communications network server literally go *through* the terminal, just like a tunnel. *See* Ex. A1, 4:8-9, 4:32-41, 5:6-9, 5:29-32, 7:10-14, 7:22-28, 8:55-59, 9:3-4, 24:32-45, 25:64-67, 28:64-67, 29:6-8, 29:41-45.

The specification repeatedly states that the portable device is in communication with the communications network *through the access terminal*. Consistent with the specification's ubiquitous use of the term "tunneling," the specification in a clear and unqualified pronouncement states that "***[i]f** the AT is connected to a communications network 113, **the TCAP may then** communicate beyond the AT*." *Id.*, 4:8-9 (emphasis added). Similarly, when the access terminal has an Internet connection, the specification explains that then (and only then) the portable device may connect to "Web based services *through the AT's connection to the Internet*. Further, the TCAP may employ a basic Web browsing core engine by which it may connect to Web services

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[13] IOENGINE, through its expert Dr. Shamos, attempts to redefine the Asserted Patent's use of "tunnel" to simply mean "a way to display content or data on the output of a terminal" (Ex. A4, ¶ 972), but this ignores the very language of the Asserted Patents. The specification states that "the TCAP 'tunnels' data *through* an AT," and thus is clear that—consistent with the commonly understood meaning of what it means to be a "tunnel"—data must go *through* the terminal to something that exists beyond the terminal (Ex. A1, 4:32-41). If IOENGINE's recasting was correct, the specification would read "the TCAP 'tunnels' data *to* an AT," which it does not.

through the AT's connection to a communications network like the Internet." *Id.*, 7:24-28

(emphasis added); *see also id.*, Title (Asserted Patents are titled "Apparatus, Method and System

for a Tunneling Client Access Point").

All further disclosures of network connectivity, including those in the figures, are entirely

consistent with this statement. For example, in Figure 10, the portable device is depicted with just

an *optional* network interface 1010 (*id.*, 24:22-23) via its two-way communication with the

"Access Terminal 1011b," and nothing else.
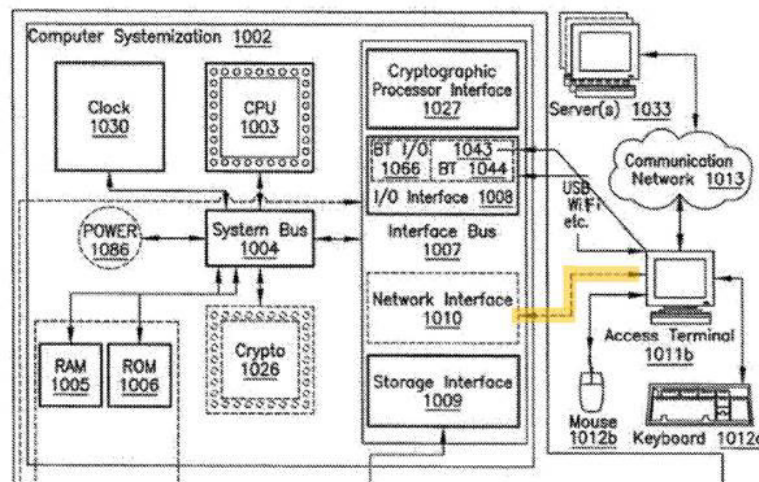
Id., Fig. 10 (emphasis added).
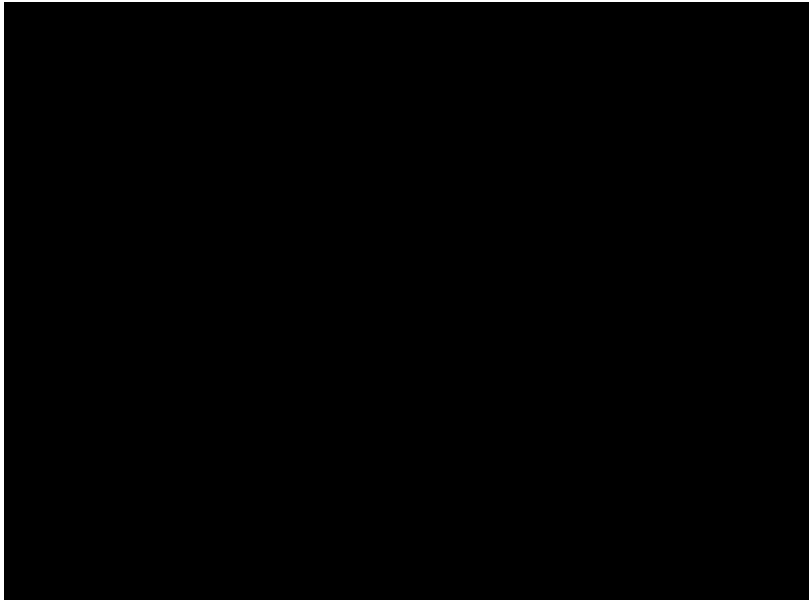
Tellingly, numerous documents produced by IOENGINE and penned by Mr. McNulty or

someone else at Mr. McNulty's direction universally describe Mr. McNulty's alleged invention as

requiring a tunnel from the portable device, *through* an access terminal, and out to the internet.

See e.g., Exs. A14, A16-A17, A19-A20. ████████████████████████████

██ .

Ex. A20 (emphasis added).

2.   IOENGINE Cannot Point to Any Material Facts in Dispute

In order to try to find support for a portable device with a direct connection to the Internet,

IOENGINE may point to statements in the specification where the portable device is involved in

transmitting information to a communications network. *See, e.g.,* Ex. A1, 10:30-34, 12:48-53,

25:45-49, 25:60-64. These statements are consistent with the portable device connecting to the

Internet by tunneling, using the *terminal's* Internet connection. And, these statements say *nothing*

about the portable device somehow being able to bypass the terminal when attempting to send a

communication to the network.[14] Just because the specification does not expressly state in every

single instance when a network is mentioned that communications are tunneled through the access

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[14] IOENGINE's expert similarly cites to various portions of the specification as allegedly providing support for a direct network connection but, as explained above, *none* of these citations actually describes a direct network connection. In fact, each cited disclosure is entirely consistent with what is actually shown in Figure 10, whereby the portable device's Network Interface 1010 goes only to Access Terminal 1011b, through which the portable device may then communicate with a communications network for purposes such as verification or obtaining software updates. *See, e.g.,* Ex. A1, 10:30-34, 12:48-53, 25:45-49, 25:60-64.

terminal does not provide support for a direct network connection. Silence cannot turn the patents'

disclosure on its head, which unequivocally describes the portable device communicating

"through" the access terminal and connecting "to Web services *through the AT's connection to a*

communications network like the Internet." *Id.*, 7:24-28 (emphasis added); *see also Novartis*

Pharms. Corp. v. Accord Healthcare, Inc., 38 F.4th 1013, 1017 (Fed. Cir. 2022) ("[s]ilence is

generally not disclosure").

IOENGINE may also attempt to rely on the "Tunneling Client Access Point **Server**"

depicted in Figure 9 as support for a portable device with a direct network connection because this

backend *server* has a network interface 910 that connects to communications network 913. But

the server is not the portable device. And, it is axiomatic that a backend network *server* would

have direct access to a communications network—this says nothing about whether the disclosed

and claimed portable device may have a direct network connection. In other words, if it makes

this argument, IOENGINE is impermissibly combining embodiments in order to provide support

for its claims. As explained by the Federal Circuit:

> A patent owner cannot show written description support by picking and choosing
> claim elements from different embodiments that are never linked together in the
> specification. In *Novozymes*, we explained that the elements of a claim must be
> treated as an "integrated whole rather than as a collection of independent
> limitations." 723 F.3d at 1349. The written description requirement is not met
> when, as here, the specification provides at best disparate disclosures that an artisan
> might have been able to combine in order to make the claimed invention.

*Flash-Control, LLC v. Intel Corp.*, 2021 U.S. App. LEXIS 20790, at *12 (Fed. Cir. Jul. 14, 2021)

(affirming *Flash-Control, LLC v. Intel Corp.*, 2020 U.S. Dist. LEXIS 143053 (W.D. Tex. Jul. 21,

2020 (Albright, J.)).

IOENGINE may attempt to justify this argument by citing the sentence noting that "[m]uch

of the description of the TCAP**S** [server] of Fig. 9 applies to the TCAP [portable device]" (Ex. A1,

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22:26-29 (emphasis added)), but the very next clause of the sentence states that "as such, the disclosure [of Figure 10] focuses more upon *the variances* exhibited in the TCAP [portable device]" (*id.,* emphasis added). As shown above, a clear "variance," or difference, between the server in Figure 9 and the portable device in Figure 10 is that the portable device's optional network interface connects to an access terminal so that Web services can be provided "*through the AT's connection to a communications network like the Internet.*" *Id.*, 7:24-28 (emphasis added).

The specification goes on to discuss another important difference, noting that while the claimed portable device may support IEEE 802.11b (*i.e.,* WiFi) and/or Bluetooth, those protocols *are only used for connecting the portable device to the claimed terminal,* exactly as depicted in Figure 10. *Id.*, 24:24-25 ("Input Output interface (I/O) 1008 may accept, communicate, and/or connect to an access terminal 1011b"), 24:32-67; *see also id.*, 5:52-65. In a brazen attempt to redraft the specification, Mr. McNulty testified during his deposition ███████████████

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████████████████████████████████ Ex. A13, 221:6-21; A12, 158:21-160:21. This is a fabrication. All one must do to discredit this is to look at the figure Mr. McNulty's attorneys submitted to the Patent Office when his original patent application was filed, which is identical. As in Figure 10, this figure shows a "USB BT WiFi" connection to the access terminal and *not* the communications network:
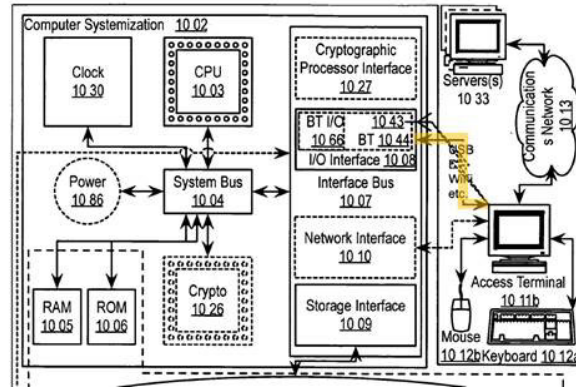
Ex. 21, Fig. 10 (emphasis added).

Roku's expert, Dr. Russ, explained: "[t]he dotted-line figure behind the text 'USB BT WiFi' is clearly a stylized lightning bolt, meant to show that the connection from the TCAP to the access terminal is wireless… It expressly discloses that the TCAP is using an optional Bluetooth or WiFi connection to connect to an access terminal (but not directly to a communications network node)." Ex. A22, ¶ 671; A24, ¶ 175. Notably, and quite tellingly, IOENGINE's expert, Dr. Shamos, does not refute Dr. Russ nor attempt to support Mr. McNulty's testimony about the Patent Office's "mistake." It is also curious that despite prosecuting approximately ten patents that all share the same figures and written specification, Mr. McNulty has not yet fixed this "mistake."

Try as IOENGINE might, there is simply no written description support for a portable device with a network interface that connects directly to a communications network node, as claimed. *See* Ex. A22, ¶¶ 665-676. Accordingly, no amount of allegedly competing testimony can create a genuine issue of material fact, and the Court should grant Roku's motion and find the Asserted Claims invalid for lacking written description support.

B.   The Specification Fails to Describe a Key Exchange Between the Portable Device and the Terminal

The asserted claims of the '584 Patent require that the portable device be configured to "employ a key exchange between the portable device and the terminal to securely transmit the

processed data through the communication interface to the terminal." Ex. A5, claim 1; *see also id.*, claims 39, 72. IOENGINE interprets this limitation as corresponding to the HDMI connection between Roku's Accused Products and a television. The Asserted Patents' specification, however, fails to disclose a single instance where the portable device engages in a key exchange *with the terminal* to securely transmit data to the terminal (and no further). *See* Ex. A22, ¶¶ 677-688.

1. The Specification Supports Roku's Position

A key exchange is a cryptographic process that allows two parties to securely share a secret encryption key. Ex. A22, ¶ 94. Many encryption standards rely on a key exchange to establish a secure connection between two parties, such as client and server devices communicating over a communications network. *Id.*, ¶¶ 96-97. The exchanged keys are then used to both encrypt and decrypt data such that it is readable to the client and server devices, for example, but unreadable to unauthorized devices, ensuring privacy of the information. *Id.*, ¶ 94.

The Asserted Patents disclose and discuss various cryptographic processes that may include key exchanges. *See* Ex. A1, 17:35-39, 20:32-43, 26:14-18, 28:28-39. In all instances, the key exchange is between the portable device and a *server* to secure network communications. But the Asserted Claims require a *different* type of key exchange: "a key exchange between the portable device and the terminal to securely transmit the processed data through the communication interface to the terminal." Ex. A5, Claim 1 (element (d)(4)). In other words, the claims require a key exchange between the portable device and the *terminal* so that data is displayed on the terminal rather than passing through the terminal.

Claim 1 does not limit the type of data sent through the communication interface to the terminal, but it must be broad enough to include video data. For example, claim 3, which depends from claim 1, states that the "communication interface comprises a video interface connection." *Id.*, claim 3. The specification simply does not describe a portable device that employs a key

exchange between the portable device and terminal such that data, including video data, is securely communicated to the terminal for display by the terminal.[15]

As an initial matter, the idea of a key exchange occurring between the claimed portable device and the terminal runs contrary to the very teaching of the specification. In fact, the specification touts the ability of the disclosed portable device to securely access the user's information *from any terminal*, regardless of whether it is a trusted terminal or not, because of the ability of the portable device to (1) tunnel through the terminal's network infrastructure to access any necessary backend servers, and (2) securely communicate with the backend servers via an encryption protocol, thereby *preventing the terminal* from intercepting and reading the data as it passes through. Ex. A1, 13:28-48. In other words, the portable device can tunnel data through *untrusted* access terminals because it is encrypting and hiding its communications from the access terminal. Thus, while the specification discloses various encryption standards that may use a key exchange, the specification contemplates *preventing the terminal* from viewing the encrypted communications. Based on the specification, one of ordinary skill in the art would not have understood Mr. McNulty to have possession over an exact opposite invention.

2.   IOENGINE Cannot Point to Any Material Facts in Dispute

Ignoring this fundamental teaching of the specification, IOENGINE may try to rely on descriptions of key exchanges in the abstract as support for the claimed invention. For example, IOENGINE's expert points to isolated sentences in the specification (taken out of context) stating that the portable device may connect to the terminal using Bluetooth. Ex. A4, ¶¶ 985-89. And because Bluetooth may use a type of key exchange, IOENGINE and its expert conclude, without

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[15] Claim 2's requirement that the "key exchange between the portable device and the terminal comprises high-bandwidth digital content protection protocol" also confirms that the key-exchange protected content of claim 1 includes video data. *See* Ex. A5, claim 2.

explanation, that there must necessarily be written description support for *the claimed* "key exchange" limitation. *Id.*, ¶ 986. This is wrong, and such conclusory expert testimony cannot create a genuine issue of material fact to avoid summary judgment. *See Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 925-26 (Fed. Cir. 2004) (when written description support is deficient on the face of the patent specification, a conclusory expert opinion cannot remedy that deficiency).

Seemingly recognizing this insufficiency, IOENGINE's expert turns to a distinct section of the specification that mentions DVI cables (the precursor to HDMI cables) to argue that Bluetooth plus DVI provides written description for the claimed key exchange. Ex. A4, ¶¶ 990-91. But not only is DVI disclosed in the specification as a type of connection that may be used to connect a network *server* to a monitor (Ex. A1, 15:41-45), and not to connect the portable device to a terminal, but there is absolutely no support to suggest that a person of ordinary skill should or could somehow combine Bluetooth and DVI connections to perform the claimed key exchange.

Cobbling together unrelated disclosures in the specification is insufficient. *Flash-Control, LLC*, 2021 U.S. App. LEXIS 20790, at *12. There simply is no written description support for the '584 Patent's claimed key exchange and no amount of unsupported expert testimony can create a *genuine* issue of material fact to avoid summary judgment. *See* Ex. A22, ¶¶ 677-688. Accordingly, the Court should grant Roku's motion and find the '584 Patent's asserted claims invalid.

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The patentee's failure to describe at least two critical limitations reveals a broad problem with the Asserted Patents: by stretching the Asserted Claims to cover scope far removed from the original disclosure, the patentee has fundamentally failed to "convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Realtime Data, LLC v. Morgan Stanley*, 554 F. App'x 923, 937 (Fed. Cir. 2014) (affirming summary judgment of

invalidity for lack of written description where patent "contain[ed] limited language and no descriptive content and hence fail[ed] to show that Realtime invented or had possession of content-based or content-dependent data decompression"); *see also Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 917 (Fed. Cir. 2004) (affirming no written description and noting that a "patent can be held invalid for failure to meet the written description requirement, based solely on the language of the patent specification," because "[a]fter all, it is in the patent specification where the written description requirement must be met"). For the foregoing reasons, Roku respectfully requests that the Court find the Asserted Claims invalid for lacking written description.

VI.   THE ACCUSED PRODUCTS DO NOT WORK WITH TERMINALS, RESULTING IN SUMMARY JUDGMENT OF NON-INFRINGEMENT

Each of the asserted claims recites a "portable device" that is configured to work in conjunction with (1) a communications network node, and (2) a "terminal." TVs connected to the Accused Products are not terminals, if "terminal" is accorded a plain-and-ordinary meaning consistent with the specification.

Interpreting "terminal" in the context of the Asserted Patents was the focus of *Markman* and, at the conclusion, the Court determined that its "final construction for 'terminal' is plain-and-ordinary meaning." Dkt. No. 86 at 16. Although the parties continue to dispute the exact confines, a "plain-and-ordinary" meaning must have boundaries. *Decisioning.com, Inc. v. Federated Dep't Stores, Inc.*, 527 F.3d 1300, 1308 (Fed. Cir. 2008) (defining the scope of the plain-and-ordinary meaning of "remote interface," which could broadly include any remote user interface, to exclude consumer-owned personal computers in view of the specification). Here, there can be no dispute that the Asserted Patents' specification expressly sets forth the *minimum* requirements for a "terminal." The specification states that the type of device used as a terminal is "not important" other than the device needs to: [1] provide "a mechanism of engagement to the [portable device]"

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and [2] provide "an operating environment for the user to engage the [portable device] through the [terminal]."[16] Ex. A1, 3:59-63. These are the boundaries that must be considered in evaluating whether or not a TV connected to an Accused Product is a "terminal." And, when Roku's Accused Products are connected to a TV, it does not provide an operating environment for the user to engage the Accused Products, so summary judgment of non-infringement is warranted.

A.   The Vizio TV is Not a Terminal in the Context of the Asserted Patents

IOENGINE alleges that Roku's streaming players are the claimed "portable device," and a TV, specifically the Vizio D-Series D40F-J09 TV (the "Vizio TV"), is the claimed "terminal." Ex. A23, ¶¶ 105, 163-172, 256. But neither the Vizio TV, nor any TV connected to the Accused Products, is a "terminal" under the plain-and-ordinary meaning because they do not provide an operating environment for the user to engage the portable device. Ex. A24, ¶¶ 36, 123-132, 145-157. This is an undisputed fact, as IOENGINE's expert, Dr. Shamos, does not even address in his report the two minimum requirements for a device to qualify as a "terminal."

Recognizing that a TV must be a "terminal" to prove infringement, IOENGINE ignores the specification and coins a new term—"terminal television"—for the first time in Dr. Shamos' infringement report.[17] Not only is rewriting the claims improper, it is inconsistent with the Asserted Patents' disclosure. *Nike Inc. v. Wolverine World Wide, Inc.*, 43 F.3d 644, 647 (Fed. Cir. 1994) (rejecting patentee's proposed construction that would, "in effect, rewrite its patent claims to suit its needs in this litigation"). The specification sets forth the minimum requirements for a

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[16] During *Markman* Roku argued that this disclosure was definitional, and the Court ultimately concluded that this statement did not demand the terminal "control actions on the portable device." Dkt. No. 86 at 14. There is a distinction between a construction and reliance on the specification to establish a minimum boundary for the plain and ordinary meaning of "terminal." Attempting to establish these boundaries is not re-arguing claim construction, as IOENGINE may suggest.

[17] IOENGINE's technical expert, Dr. Shamos, and its damages expert, Mr. Bratic, now refer to the "terminal" as "terminal television." Ex. A23, ¶ 105; Ex. 25, ¶¶ 17, 31, 41, 223, 230.

"terminal" and expressly associates "terminal" with several devices, such as a server, a desktop computer, and a laptop. It *never* associates "terminal" with a TV, and does not use the phrase "terminal television." Ex. A1, 3:57-59.

The claim term is "terminal," full stop. IOENGINE's revision of this language—linking "terminal" to television—is a blatant attempt to mislead the jury into concluding that the Vizio TV is a "terminal" for infringement. Even with a "plain-and-ordinary" meaning, claim terms must have boundaries. *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360, 1362 (Fed. Cir. 2008). This is particularly true when, as here, IOENGINE manipulates the "plain-and-ordinary" meaning by ignoring the specification and inventing a new claim term. Based on the intrinsic evidence, a "terminal" *can* be a number of different computing devices, but it *cannot* be broadened to include the Vizio TV, or any TV connected to the Accused Products.

The Asserted Patents disclose a particular environment and interoperability between the portable device and terminal. The portable device connects to an existing desktop or laptop computer (the "terminal") by plugging the portable device into one of the computer's USB ports, for example. Ex. A1, 3:63-65; 5:54-56. This allows information residing on the portable device to be displayed to the user, and for the user to control the portable device using the connected computer's keyboard and mouse. *Id.*, 2:48-53; 4:50-52; 9:30-35; 9:44-52; 10:18-38. As to what may constitute the plain-and-ordinary meaning of "terminal," the specification explains that terminals may be "any number of computing devices such as *servers, workstations, desktop computers, laptops, portable digital assistants (PDAs), and/or the like*." *Id.*, 3:57-59 (emphasis added); *see also id.*, Fig. 1. Consistent with the foregoing, the specification further explains that "[t]he type of [terminal] used is not important other than the device should [1] provide a compatible

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mechanism of engagement to the [portable device] and [2] provide *an operating environment for the user to engage the [portable device] through the [terminal]*." *Id.*, 3:59-63 (emphasis added).

In short, "terminals" are general-purpose computers, whether a small computer like a PDA or laptop, or a larger computer, like a desktop computer, workstation, or server. This is important because, again, it is the "terminal" (*i.e.*, computer) that "provides an operating environment for the user to engage the [portable device] through the [terminal]." *Id.* Presumably IOENGINE is capitalizing on the "and/or the like" language of the specification, but the Vizio TV is *not* like the "terminals" disclosed in the Asserted Patents.[18] Indeed, the Vizio TV, or any TV connected to the Accused Products, is fundamentally different from the types of general-purpose computers disclosed as "terminals"—the undisputed evidence shows that these TVs *do not* provide an operating environment for the user to engage the "portable device." Ex. A24, ¶¶ 149, 166-172.

Not only does Dr. Shamos fail to offer proof regarding this argument, but Roku's expert, Dr. Russ, conclusively demonstrated that TVs do *not* provide an operating environment for a user to engage the Accused Products. Rather, the Accused Products are self-contained computing devices, with their own operating system, that are controlled with a remote control separate from the TV's remote control. *Id.*, ¶¶ 123-132, 166-172. Moreover, Dr. Russ demonstrated that when an Accused Product is disconnected from a TV, it is fully functional and its user interface, for example, can be manipulated and changed. *Id.*, ¶¶ 123-132. While the operation and control of the Accused Product is not visible to the user until plugged back into a TV, this indisputably demonstrates that the operating environment that is used to engage the Accused Product is *not* provided by the TV, but instead by the Roku player itself. *Id.*, ¶¶ 123-132.

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[18] IOENGINE does *not* argue that the Vizio TV, if not literally a terminal, is a terminal under the doctrine of equivalents.

Separately, and to the extent that one of ordinary skill would even attempt to give a name to the Vizio TV as it is used with the Accused Products, it would be an "output device" or a "peripheral device," but not a "terminal." *Id.*, ¶ 149; *see also id.*, ¶¶ 166-172. In the context of the Asserted Patents' Figure 9, terminals can connect to "output devices" such as an LCD monitor. Ex. A1, 15:41-45. The specification also calls monitors "[p]eripheral devices." *Id.*, 15:56-64. Thus, "terminals" connect to "output devices" or "peripheral devices" like TVs or monitors, so that the user can see what the terminal is doing. And this is exactly what the Accused Products do when connected to a Vizio TV or otherwise.[19] The Accused Products borrow the TV's screen, but they do not use the TV to provide an *operating environment for the user to engage the Accused Product*. Ex. A24, ¶¶ 123-132. Thus, the simple act of plugging an Accused Product into a TV does not amount to infringement because the Accused Products do not work with "terminals" as that term is used in the Asserted Patents."[20]

IOENGINE's infringement arguments rely exclusively on the notion that the plain-and-ordinary meaning of "terminal" includes the Vizio TV or is synonymous with "terminal television." Based on the patents' disclosure and the unrebutted evidence provided by Dr. Russ, this is not correct. Because there can be no dispute that the Accused Products connect to TVs, and that the Accused Product is not engaged by a user through the TV's operating environment, summary judgment of non-infringement is appropriate.

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[19] The Accused Products' use of a TV is no different than what the Court is likely familiar with in the context of using an external monitor with a desktop computer, or connecting a laptop to an external monitor to increase the size of the laptop's screen. In neither instance is the user, by connecting the computer or laptop to a monitor, connecting the computer to a "terminal" or using the monitor's operating environment to control the computer. The computer is controlled on its own, independent of the monitor.

[20] This is just like plugging a DVD player into a TV, which has now been done for decades, and with VCRs for decades before that.

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B.   IOENGINE's "Terminal Television" Construct Falls Outside of the Plain-and-Ordinary Meaning of "Terminal"

IOENGINE has contorted the claim—for the purpose of this litigation—and there is no support for the newly minted "terminal television" phrase. The great lengths that IOENGINE goes to force-fit the Vizio TV into the claims only underscores the fact that when the Accused Products connect to TVs, they are not working with "terminals" as demanded by the claims.

To fully appreciate the issue, it is necessary to understand IOENGINE's shifting definition of "terminal," depending on the forum and whether it is arguing infringement or that the Asserted Patents are valid. In its complaint and preliminary contentions, IOENGINE alleged that when the Accused Products are connected to a TV, the Accused Products communicate with a "terminal," and thus infringe. More specifically, IOENGINE argued that "[t]he Roku Streaming Players are configured to communicate with a terminal comprising an output component, such as a television." Dkt. No. 1, ¶ 53; *see also* Ex. A27, at A-27; Ex. A28, at B-27 (same).

Then, during *Markman*, IOENGINE argued that a "terminal" is a "computing device." Dkt. No. 86 at 6. A few weeks later, however, during the parties' co-pending IPRs, IOENGINE represented to the Patent Office that a "terminal" is a "computing device" that must have "general purpose processing capabilities and can load and execute program code." Ex. A29, at 26. Not only was this articulation *never* previously provided to the Court or Roku during *Markman*, but IOENGINE relied on this new and expanded definition to argue—amazingly—that the TVs in the prior art, such as the TV in the Ozawa reference, is simply a display device that the Asserted Patents would call a "peripheral device" and *not* a "terminal." *Id.*, at 36-38. While Roku agrees that when the Accused Products connect to a TV they are not connected to a "terminal," IOENGINE obviously believes there to be a difference between whether a TV qualifies as a

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"terminal" in front of the Patent Office for invalidity, versus whether a TV qualifies as a "terminal" for infringement in front of this Court.

Boldly ignoring that it succeeded at the Patent Office based on its representation that when a set top box connects to a TV it is not connecting to a "terminal," and ignoring that set top boxes and the Accused Products connect to TVs in the same way (with an intermediary cable), IOENGINE now *equates* a TV to a terminal by inventing the "terminal television." Not only does IOENGINE's expert coin a new term in his opening report, he proposes a nonsensical new definition: "I use the phrase 'terminal television' herein to refer to a terminal that functions as a television." Ex. A23, ¶ 105 n.4. He also provides an example of a "terminal television" that finds no support in the specification: "*A television that is able to implement HDCP over HDMI is an example of a terminal television.*" *Id.; see also* Ex. A10, 231:9-23, 233:13-234:13. HDCP, which is short for high-bandwidth digital content protection protocol, is an industry standard encryption protocol that prevents digital content being sent over an HDMI cable, for example, from being illegally copied. HDCP is not mentioned in the specification of the Asserted Patents, TVs are never mentioned as terminals, and the term "terminal television" was invented out of whole cloth.

IOENGINE's untenable position is evidenced by the fact that, according to Dr. Shamos, the Vizio TV is only *sometimes* a "terminal television." It is undisputed that the Vizio TV includes analog/composite inputs, so that older devices can connect to it, as well as digital/HDMI inputs for current-day devices. Ex. A11, 122:12-123:25; Ex. A30. Dr. Shamos testified that the Vizio TV is *not* a "terminal television" when a portable device is connected to the TV using the analog input, but the Vizio TV *is*—and apparently transforms into—a "terminal television" when a portable device is connected to the TV using an HDMI cable. Ex. A11, 122:12-130-4; *see also id.*, 165:3-168:10.

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Thus, at least according to Dr. Shamos, if the Accused Product connects to the Vizio TV using analog inputs, then the TV is just a TV, but if the Accused Product connects to the same Vizio TV using digital inputs, such as DVI or HDMI, then the TV shape-shifts and becomes an infringing "terminal television."[21]   This convoluted web of "logic" for how a skilled artisan might be able to surmise whether he or she is connecting a portable device to a TV, or connecting the device to the illusory "terminal television," is *nowhere* described in the Asserted Patents, which Dr. Shamos admitted. *Id.*, 129:6-130:4. Dr. Shamos also admitted that whether a device connects to a TV using analog/composite inputs, or is connected using digital inputs such as HDMI, *in both instances* the TV is simply being using as a *display device.* Ex. A11, 168:4-10; *see also id.*, 166:12-168:10. Display devices, as IOENGINE argued during IPR, are not "terminals."

While the Asserted Patents provide no discussion of TVs being used as terminals, the patents do explain that display devices, like TVs, are peripheral devices and not terminals. Ex. A1, 15:41-15; 15:56-64. This confirms that when the Accused Products are connected to a TV, they are not connecting to a "terminal" and summary judgment of non-infringement is warranted.

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Since the 1800s it has been held that "[a] patent may not, like a nose of wax, be twisted

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[21] Stated differently, IOENGINE and Dr. Shamos' position appears to be that some TVs are not terminal televisions (those with only analog input connections), some TVs can be terminal televisions (those with only digital inputs capable of performing HDCP), and some TVs with both analog inputs and digital inputs capable of performing HDCP can sometimes be terminal televisions if a device is connected to the TV using the digital/HDCP connection. Absent an express articulation of this in the specification, such a convoluted argument for whether a TV can constitute a terminal television, let alone the Asserted Patent's claimed terminal, cannot possibly be part of "terminal's" plain-and-ordinary meaning. Moreover, each patent claim carries with it an important public notice function so that the public is informed of the boundaries of what constitutes infringement, and what does not. Short of being sued by IOENGINE, it would be impossible for any entity to determine, based upon the Asserted Patents themselves, whether connecting a portable device to a TV amounts to connecting a portable device to a "terminal."

one way to avoid anticipation and another to find infringement." *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001) (citations and internal quotation marks omitted). To argue that some prior-art TVs are not terminal televisions but the Vizio TV is a terminal television, IOENGINE has twisted its nose beyond recognition. This underscores that IOENGINE's "terminal television" construct falls well outside of the plain-and-ordinary meaning of "terminal." Accordingly, the Court should grant summary judgment of no infringement.[22]

VII.   THE ACCUSED PRODUCTS CPU IS NOT "CONFIGURED TO STREAM DATA CONTENT FOR PRESENTATION BY THE TERMINAL OUTPUT COMPONENT," RESULTING IN NON-INFRINGEMENT

Summary judgment of non-infringement is warranted as to all Asserted Claims of the '819 Patent (along with a subset of claims of the '584 Patent)[23] because the Accused Products' central processing unit ("CPU") is not responsible for streaming video content to the attached TV.

The relevant claims recite a portable device with four main components: (1) a network interface to enable transmitting communications between the portable device and the Internet, (2) a communications interface (an HDMI interface/cable according to IOENGINE) to enable transmitting communications between the portable device and the terminal, (3) *a processor configured to stream data content to the terminal for presentation by the terminal output component*, and (4) a memory having executable program code stored thereon. IOENGINE points to the existence of a CPU in Roku devices as meeting this limitation. This is insufficient, as the

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[22] If the Court is not inclined to grant Roku's motion for summary judgment, Roku requests that, at a minimum, the Court preclude Dr. Shamos from arguing that certain TVs are terminals and other TVs are not terminals based upon the above-noted arguments, which find no support in the Asserted Patents' common specification.

[23] Roku's analysis herein focuses on claim 184 of the '819 Patent, but Roku's analysis is directly and equally applicable to claims 6, 7, 10, 11, 34, 44, 45, 48, 68, 78, and 79 of the '584 Patent, which all recite various "program code" limitations, which when executed by the portable device processor, is configured to cause a data stream to be transmitted through the portable device's communication interface to the terminal for display by the terminal output component.

claims require more—the processor identified by IOENGINE must also "stream data content for presentation by the terminal output component." And the Accused Products have components *separate from the CPU* that control HDMI functionality and the transmission of audio/video data from the Accused Products to a connected TV. The undisputed facts demonstrate that Roku is entitled to summary judgment of non-infringement as to all asserted claims of the '819 Patent, along with dependent claims 6, 7, 10, 11, 34, 44, 45, 48, 68, 78, and 79 of the '584 Patent.

A.   **The Processor Identified by IOENGINE is not "Configured to Stream Data Content for Presentation by the Terminal Output Component"**

IOENGINE's direct infringement allegations identify various ARM and MIPS CPUs as the claimed processor.[24] Ex. A23, ¶¶ 186-87. The CPU of the Accused Products sits on what is known as a "System-on-a-Chip" or "SoC," which is a type of integrated circuit design combining many of the hardware/software components of the product onto a single chip rather than having all components separately mounted to the main motherboard.

IOENGINE argues that the Accused Product's CPUs must necessarily be "configured to stream data content for presentation by the terminal output component" because the devices all have HDMI interfaces used to transmit a "stream" of digital data to a connected TV. *Id.*, ¶¶ 188-91. IOENGINE falsely concludes that because the Accused Products have (1) CPUs, and (2) an HDMI interface, that the CPUs must necessarily be "configured to stream data content for presentation by the terminal output component," as claimed. *See id.* However, this is an impermissible and conclusory inference and failure of proof on IOENGINE's part. *See Forsyth*, 19 F.3d at 1533 ("improbable inferences" do not create a genuine issue of material fact). Having CPUs and sending a stream of data to a connected TV using an HDMI interface, *does not* mean

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[24] IOENGINE points to the ARM Cortex A55 processor (on the Roku Express, Roku Express 4K+, Roku Streaming Stick 4K, Roku Streaming Stick 4K+, Roku Ultra LT and Roku Ultra), and the ARM Cortex A53 processor (on the Roku Streaming Stick+ and Express+). Ex. A23, ¶¶ 186-87.
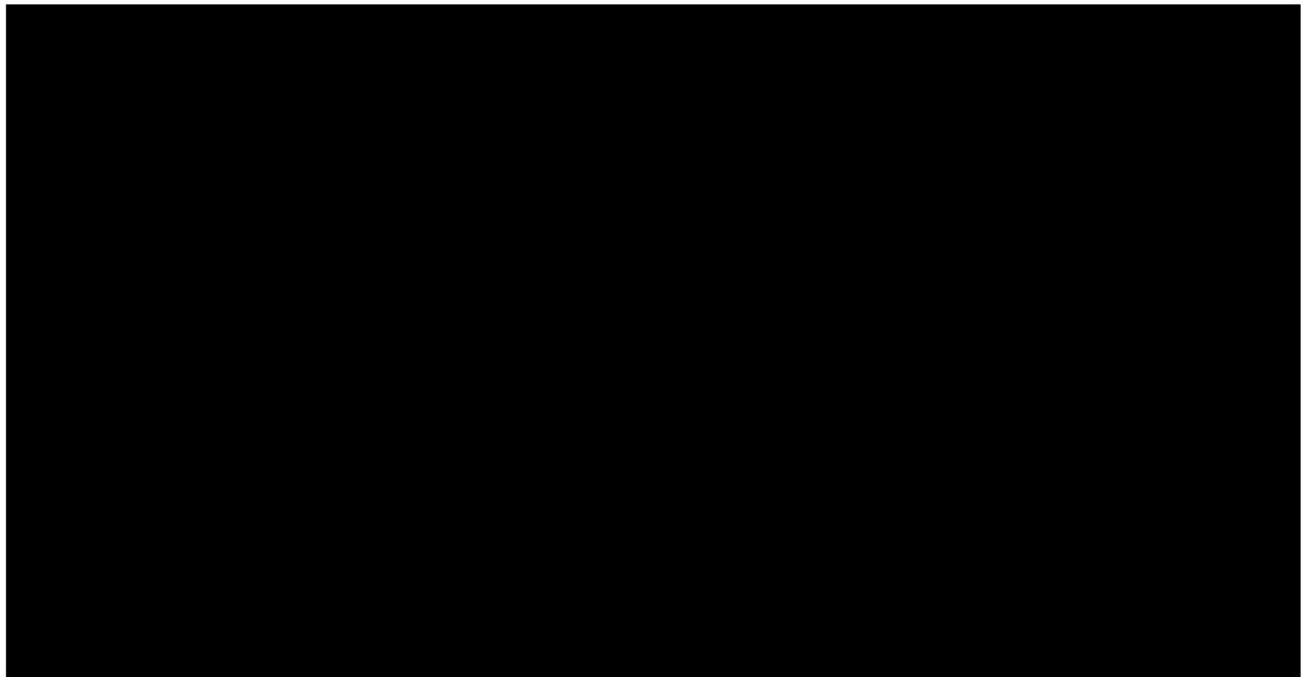
that the CPU identified by IOENGINE in the Accused Products is "configured to stream data content for presentation by the terminal output component."

Rather, as Roku's expert explained, the Accused Products have *separate* components that control HDMI functionality and transmit audio/video data from the Accused Products to a connected TV. Ex. A24, ¶¶ 94-102. The following block diagram for the SoC found on the accused Roku Ultra and Ultra LT products[25] illustrates these components.

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[25] This is exemplary but consistent with the hardware architecture found on all Accused Products. Ex. A24, ¶¶ 97, 101-102.

In other words, components other than the CPU are responsible for processing video content and sending that content to a connected TV. Thus, the processor identified by IOENGINE is not "configured to stream data content for presentation by the terminal output component" as recited in claim 184, and IOENGINE's inference that the mere presence of a CPU and HDMI components inherently satisfies the claim language is wrong and a failure of proof. Incorrect and conclusory expert assumptions cannot create a *genuine* issue of material fact. Accordingly, IOENGINE has failed to satisfy its burden to establish direct infringement and there are no genuine issues of material fact precluding the Court from granting summary judgment.

B.   IOENGINE's Cannot Rely on the Doctrine of Equivalents

To the extent that IOENGINE attempts to argue infringement under the doctrine of equivalents ("DOE"), IOENGINE is precluded from doing so. First, any reliance on the DOE has been waived. While IOENGINE attempts to raise a DOE argument with respect to the processor limitation in its infringement report (Ex. A23, ¶ 192), IOENGINE previously failed to present any specific DOE argument with respect to this limitation in its complaint, initial infringement contentions, or amended infringement contentions (*see* Dkt. 1, ¶ 62; Ex. A26; Ex. A27, A46-49; Ex. A31; Ex. A32, A70-77). Thus, IOENGINE failed to put Roku on notice with respect to its theory of infringement, and any DOE arguments appearing for the first time in Dr. Shamos' report have been waived. *See Arendi S.A.R.L. v. Motorola Mobility LLC*, No. 12-1601, Dkt. No. 250 (D. Del. Jan. 25, 2021) (Stark, J.) (granting motion to strike and finding that plaintiff's passing

reference to DOE "does not come close to satisfying [plaintiff]'s obligation to articulate, in a timely manner, contentions and then expert opinion and linking evidence specifically directed to the claim elements it contends are met (at least contingently) by a theory of equivalents"); *see also Sycamore IP Holdings LLC v. AT&T Corp.*, 2017 U.S. Dist. LEXIS 167297, at *13-24 (E.D. Tex. Oct. 10, 2017) (Bryson, J.) (granting motion to strike plaintiff's DOE theories raised for the first time in an expert report, and noting "Courts in this district have been clear that doctrine of equivalents theories must be laid out in detail in a party's infringement contentions and that the type of boilerplate allegations contained in [plaintiff]'s infringement contentions are insufficient").

Second, IOENGINE's first and only articulation of a theory of infringement under the DOE came in the form of one conclusory paragraph in Dr. Shamos' report. Ex. A23, ¶ 192. But this paragraph fails to set forth any specific allegations or theories under the function/way/result and/or insubstantial differences tests. Rather, Dr. Shamos simply alleges:

Id.

It is impossible for Roku to address and rebut such a conclusory argument. As shown above, the SoC that Dr. Shamos identifies as an alleged equivalent includes many sub-components. Dr. Shamos fails to even identify the specific subcomponents that constitute the alleged equivalents, or explain whether any such conglomeration of components would be a legally permissible equivalent to the claimed "processor configured to stream data content for presentation by the terminal output component." Thus, even if IOENGINE's DOE theory is not waived, the one conclusory paragraph in Dr. Shamos' report is insufficient to allow IOENGINE to move forward on such a basis. *See Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 1001 (Fed. Cir.

2008) ("[c]onclusory expert assertions cannot raise triable issues of material fact"); *see also Smith & Nephew, Inc. v. Arthrex, Inc.*, 2010 U.S. Dist. LEXIS 10257, *26-30 (E.D. Tex. Feb. 5, 2010) (preventing plaintiff's expert from opining on infringement under the doctrine of equivalents where expert provided an "inadequate and mere conclusory" analysis).

Finally, even if the Court were to disagree with the first two points above, IOENGINE's DOE arguments are estopped based on their inconsistent statements made to the Patent Office during the IPR proceedings with respect to the '819 Patent, as well as in their validity positions in this case.   IOENGINE tried to distinguish prior art ("Ozawa") with respect to the processor limitation on the basis that Ozawa's processor (CPU 132, outlined in red below) does not "play[] any role in providing video content" to the identified TV, because "video content, which is received via inband tuner 104, bypasses CPU 132 on its way to the 'Video/TV' output 166." Ex. A29, at 38-39.[26]
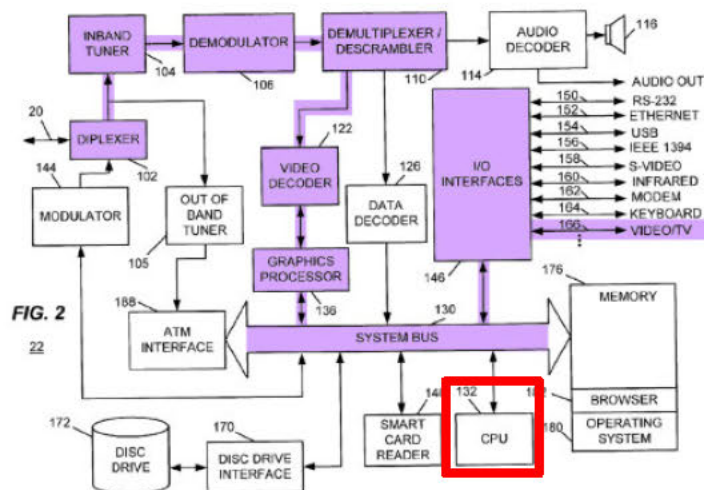
Ex. A29, at 39 (purple highlighting in original).

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[26] IOENGINE continues to make the same arguments in response to Roku's invalidity positions. *See* Ex. A4, ¶¶ 741-46.

Stated more plainly, IOENGINE told the Patent Office that because Ozawa's video processing is done with components (highlighted in purple) outside the CPU (boxed in red), Ozawa fails to disclose the claimed "processor configured to stream data content for presentation by the terminal output component." This argument dooms IOENGINE's direct infringement allegations because the functionality in Roku's Accused Products relies on components that sit outside of the CPU that IOENGINE points to as the claimed processor.

Further, these arguments constitute prosecution history estoppel. In other words, IOENGINE has relinquished any scope of protection under the DOE that would recapture infringement by components other than the CPU. *Amgen Inc. v. Coherus BioSciences, Inc.*, 931 F.3d 1154, 1161 (Fed. Cir. 2019) (holding that prosecution history estoppel barred plaintiff from succeeding on its infringement claim under the doctrine of equivalents). If video processing by some unspecified SoC component could satisfy the claimed "processor" limitation, then IOENGINE's entire basis for distinguishing Ozawa before the Patent Office no longer stands. But based upon the public-notice function provided by prosecution histories, including histories created during IPR proceedings, IOENGINE cannot walk back its Ozawa arguments. *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1361-62 (Fed. Cir. 2017).

Accordingly, IOENGINE's statements made at the Patent Office clearly and unmistakably surrendered the very arrangement that IOENGINE now seeks to recapture under the DOE. The public must be entitled to rely on those representations when determining a course of lawful conduct. *See Festo Corp. v Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 733-34 (2002); *Aylus Networks,* 856 F.3d at 1361-62. IOENGINE has foreclosed the possibility of arguing DOE with respect to claim 184's processor limitation, as well as dependent claims 6, 7, 10, 11, 34, 44, 45, 48, 68, 78, and 79 of the '584 Patent.

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The Accused Products' CPU, identified by IOENGINE as the claimed "processor" is not "configured to stream data content for presentation by the terminal output component." Recognizing this defect, IOENGINE for the first time in its expert report attempts to invoke DOE, but this fails as a matter of law. Summary judgment of non-infringement as to all asserted claims of the '819 Patent and dependent claims 6, 7, 10, 11, 34, 44, 45, 48, 68, 78, and 79 of the '584 Patent is therefore warranted.

VIII.   CONCLUSION

For the reasons set forth above, the Court should grant summary judgment as follows: (1) the Asserted Patents' earliest possible priority date is March 23, 2004; (2) the Asserted Claims are invalid for lacking written description; (3) the Asserted Claims are not infringed because there is no "terminal" when the Accused Products are connected to a TV; and (4) all Asserted Claims of the '819 Patent, along with dependent claims 6, 7, 10, 11, 34, 44, 45, 48, 68, 78, and 79 of the '584 Patent, are not infringed as they lack the specific processor recited in these claims.

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Respectfully submitted,

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<u>CERTIFICATE OF SERVICE</u>

I hereby certify that on July 11, 2023, I electronically filed the foregoing with the Clerk of the Court for the United States District Court for the Western District of Texas, Waco Division, via the CM/ECF system, which will send a notice of filing to all counsel of record who have consented to service by electronic means. An electronic copy of the foregoing, including any attached exhibits, was also sent via email to counsel of record.

/s/ *Tia D. Fenton*
Tia D. Fenton